end Al detection circuit and methodology that could be implemented. The disclosure incorporated herein by reference. The parameters are used by microcontroller 101 to determine the characteristics of the alternator. Techniques using parameters of alternator output signals to determine alternator operation are described in United States Patent 3, 629,704, 4,459,548, and 4,315,204, incorporated herein by reference. Parameter signal 153 is next sent to analog-to-digital converter 105 and then into microcontroller 101.